EVALUATING THE RISK FACTORS ASSOCIATED WITH ATTEMPTED SUICIDE AMONG MALE ALCOHOL DEPENDENTS
A case control study

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CERTIFICATE

This is to certify that this dissertation entitled **"EVALUATING THE RISK FACTORS ASSOCIATED WITH ATTEMPTED SUICIDE AMONG MALE ALCOHOL DEPENDENTS"** – A case control study: is the bonafide original work of **Dr.M.Priya Subhashini** in partial fulfillment of the requirement for MD (Branch XVIII) Psychiatric examination of the Tamil Nadu Dr.MGR Medical University to be held in March 2008.

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DECLARATION

I, Dr.M.Priya Subhashini, solemnly declare that this dissertation **"EVALUATING THE RISK FACTORS ASSOCIATED WITH ATTEMPTED SUICIDE AMONG MALE ALCOHOL DEPENDENTS"** is a bonafide record of work done by me in the Department of Psychiatry, Government Stanley Medical College and Hospital, Chennai under the guidance of **Prof.Dr.M.Thirunavukarasu**, Head of the Department, Department of Psychiatry, Government Stanley Medical College and Hospital, Chennai – 600 001.

This dissertation is submitted to the Tamilnadu Dr.M.G.R.Medical University, Chennai in partial fulfillment of the University regulations for the award of MD Degree (Psychiatry) Branch-XVIII, Psychiatry Examination to be held in March 2008.

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CONTENTS

INTRODUCTION

Suicide is derived from the Latin word for "Self - Murder". It is defined as a fatal act that represents the person's wish to die. Suicidal behaviour or suicidality can be conceptualized as a continuum ranging from suicidal ideation to suicide attempts and completed suicide. A developmental process which leads to suicidal ideation, self - destructive behaviour, in some cases even to suicide, and its consequences to the survivors is often referred to as a suicidal process. Attempted suicide / deliberate self harm are terms used to describe behaviours through which people inflict acute harm upon themselves, poison themselves, or try do so, with non - fatal outcome.

According to Kay Redfield Jamison

"The suffering of the suicidal is private and inexpressible, leaving family members, friends and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its after math a level of confusion and devastation that is, for the most part, beyond description".

The phenomenon of substance abuse has many implications for Brain research and for clinical psychiatry. Some substances can affect both internally perceived mental states such as mood and externally observable activities such as behaviour. Alcohol use and Alcohol related disorders are associated with 25% of all suicides. Alcohol abuse reduces life expectancy by approximately 10 years and alcohol leads all the other substances in substance related deaths.

Alcohol abuse is a major precipitating factor for suicide. The suicide rate is higher when compared to general population. Prevalence rate of suicide in persons with alcohol related disorders range from 10 - 15%. Upto 40% have made a previous suicide attempt. A past suicide attempt is perhaps the best indicator that a patient is at increased risk of suicide.

There are some general characteristics of suicidal behaviour in alcohol dependent individuals. They are likely to be young, to be single or separated and to have made serious attempts. They differ from non attempters by higher levels of impulsive aggression, drug use and psychiatric comorbidity particularly depressive disorders. (**Modesto - Lowe et al.,)**[29]

A high prevalence of additional psychiatric disorder is found among persons seeking treatment for alcohol. About 30 - 40% of persons meet the diagnostic criteria for major depressive disorder sometime during their life times. Persons with Alcohol related disorders and major depressive disorder are at greater risk for attempting suicide. **(Conner et al.,)**[12]. After mood disorders substance dependence represents the most frequently encountered diagnosis among victims of suicide.

Suicide is apparentely a preventable volitional act. Examination of multiple factors may improve assessment of suicide risk. Alcohol dependence is a potent risk factor for completed suicide and medically serious attempts, but data are limited on factors that distinguish risk within this high risk population.

Hence, the purpose of this study is to identify risk factors for suicide attempts among alcohol dependents.

REVIEW OF LITERATURE

The association of Alcohol dependence with suicidal behaviour is well established although complex. On the basis of epidemiological and clinical evidence, Alcohol dependence is known to increase the risk for suicidal ideation, suicide attempts and completed suicide. However this risk is modulated by a wide variety of factors including sociodemographic, clinical, treatment related and life situational characteristics as well as current drinking status and the effect of inebriation.

The harmful consequences of irresponsible drinking are numerous. They can be physiological, psychological (suicide, depression), financial (poverty, indebtedness), or social (violence, marital breakdown, unemployment, legal problems). These problems affect not only the concerned individual, but also his family members and the community in which he lives.

A. SOCIO-DEMOGRAPHIC VARIABLES AND ATTEMPTED SUICIDE

About 80% of all alcohol dependent suicide victims are male, whites, middle aged, unmarried, friendless, socially isolated and currently drinking. **Preuss et al.,**[40] in their 5 year prospective study evaluated attributes associated with suicide attempts in a group of treatment seeking persons with Alcohol dependence. They came to a conclusion that Alcohol dependent subjects with suicide attempts during the follow - up period were more likely than subjects

with no suicide attempts. They said that factors related to future suicide attempts are younger age, being separated or divorced. Gender did not predict future attempts.

Benjaminsen et al.,[5] said that compared to non - attempters, the suicide attempters were significantly more likely to be female, have had a chaotic upbringing and to have known suicide attempts in the family and social circle. **Beautrais**[3] in his study of risk factors for attempted suicide among young Alcohol dependents found that social and educational disadvantage contribute to suicidal behaviour.

Sher L[45] said that multiple sociocultural and environmental factors influence suicide rates among alcohol dependents. Impulsivity and Aggression are strongly implicated in suicidal behaviour. Lower serotonin activity is tied to increased suicidal behaviour. They also argued that middle aged and older men with Alcohol dependence and mood disorders are at particularly high risk.

Modesto-Lowe et al.,[29] in their study said that suicide attempters are likely to be young, to be single or separated and to have made prior attempts. **Schmidtke et al.,**[43] stated that young age of 15 to 24 years, female sex, poor education, unemployment, living alone and history of socioeconomic deprivation are potential risk factors for attempted suicide among Alcohol dependents.

Deshpande et al.,[14] concluded that the study group had an age range of 21 - 59 years. The mean age of problem drinking was 26 - 32 years. The mean Alcohol use was 11 - 18 years. **Patil Vanshree et al.,**[36] said that attempted suicide in Alcohol dependents is common in those individuals whose income is less than Rs.500/- month.

B. STRESSFUL LIFE EVENTS AND SUICIDE ATTEMPTS

Individuals show various stress - reactions, when the physical and psychological elements of events in life impose greater demand on him. These stress provoking events of life are generally termed as "STRESSFUL LIFE EVENTS". Such stress generating events may incorporate physical, social and psychological events of life that build mental pressure and anxiety in individual, which in turn transports him to psychological tension.

Among male alcoholics life stress is connected with family discord and separations in all age groups. Other sources of stress are unemployment and financial troubles. Among female alcoholics, depression and adverse interpersonal life events are more frequent causes of suicide attempts.

Fouquereau et al.,[17] said that stress may influence drinking when alternative resources are lacking, when alcohol is accessible, and when the individual believes that alcohol will help to reduce the stress. **Jose et al.,**[21] found that drinking appears to follow stress and that individuals differ in the amount of alcohol they consume in response to stress.

Brown et al.,[8] concluded that among abstinent alcoholics severe and chronic life stressors may lead to alcohol relapse. **Deshpande et al.,**[14] said the commonest life stressors being financial followed by job related stressors.

Paykel et al.,[37] said that attempters were reported to have experienced more number of stressful life events, most common being interpersonal problems. **Ponnudurai et al.,**[39] stated that familial and environmental stress predispose individuals to suicidal behaviour.

Conner et al.,[12] said that financial difficulties were more frequent among medically serious attempters. **Pfeffer et al.,**[38] argued that family discord, suicide attempts of mother and substance abuse of parents were more prevalent among adolescent alcoholics with history of suicide attempt.

Schukit et al.,[44] in their study found that attempters had more alcohol related problems, experienced early antisocial difficulty, misused drugs and had first degree relatives suffering from alcoholism or affective disorder. 85% of the alcohol related problems had antedated the attempt. Attempts had occurred amidst heavy drinking, life problems and mood swings. They went on to postulate that those who had attempted suicide had decreased frustration tolerance and increased impulsivity.

Murphy et al.,[30] in his study sates that loss of interpersonal relationship, that too in preceding six weeks of attempt has emerged as an important predictor of suicide among alcohol dependents.

C. PATTERNS OF ALCOHOL USE AND SUICIDE ATTEMPTS

Mechanisms have been postulated underlying intoxicated suicidal attempts. They are as follows:

a) Abreactive suicide attempt in which the attempt is said to occur at the onset of drinking or at the time of rapid increase in the level of intoxication in the context of interpersonal interaction and the concomitant behaviour observed - explosive, aggressive, and hyperactivity.

b) A depressive syndrome of chronic intoxication in which the attempts are based on Alcohol induced depression after prolonged period of drinking.

Hufford[20] Said that acute effects of Alcohol intoxication act as proximal risk factors for suicidal behaviour. Mechanisms responsible for Alcohol's ability to increase the suicidal behaviour include alcohol's ability to

i. Increase psychological distress

ii. Increase Aggressiveness

iii. Propel suicidal ideation into action through suicide-specific alcohol expectancies

iv. Constrict cognition which impairs the generation and implementation of alternative coping strategies.

Sher[45] argued that Intoxicated people are more likely to attempt suicide using more lethal methods. They are more prone for suicide especially at the end of a binge or in the very early phase of withdrawal. **Valtonen et al**[49] said that rate of suicidal attempts peaked in autumn and being lowest during winter. Study subjects tend to contact health services in the late evening and around midnight.

Smith and Burvill[47] found that among both males and females (aged 15-39 years), the highest rate of attempted suicide occurred during the years of highest consumption of spirits containing higher alcohol content.

Merrill et al.[28] Compared the characteristics of attempted suicide by alcohol consumption group. Drinking histories were taken on 250 consecutive attempted suicide patients. 51% of men and 31% of women drank more than the weekly limits recommended by the health education council of the men, 22.5% drank more than 50 units of Alcohol a week and 9.5% of the women drank more than 35 units of Alcohol a week.

Cornelius et al.[13] said that recent suicidal behaviour was significantly associated with recent very heavy drinking (< or = 70 drinks per week) and with number of drinks per drinking day. Quantity of drinking per drinking day was also significantly higher in those making a recent suicidal attempt.

Buydens-Branchey et al.,[10] in their study on age of alcoholism onset and its relationship to psychopathology found that type 2 alcohol dependents as

well as their father had been found to abuse alcohol at a younger age than type 1 patients. Patients with an onset of alcoholism before the age of 20 were found to have a higher incidence of paternal alcoholism and were twice as likely to have been incarcerated for crimes involving physical violence. They also observed that patients who started abusing alcohol in their teens were three times more likely to be depressed and four times more likely to have attempted suicide when compared to patients who had a later onset of alcohol abuse.

Black et al.,[7] in their study of 262 inpatient alcoholic males found the following drinking patterns.

- Most drank in 24 hrs.
- Binge drinking
- Black outs

D. SUICIDAL INTENT AND ATTEMPT

The clinical feature most often associated with seriousness of the intent to die is a diagnosis of a depressive disorder. This is shown by studies that relate the clinical characteristics of suicidal patients with various measures of the medical seriousness of the attempt or of the intent to die. Also intent to die scores correlate significantly with both suicide risk scores and the number and severity of depressive symptoms.

The attempters rated as having high suicide intent are more often male, older, single or separated, and living alone. **Beck**[4] found that the risk of committing suicide rose 67% with each point that the precaution scale increased. 4.8% of attempters who eventually killed themselves had described taking more precautions against their discovery at the time of their index attempt.

Over holser et al.[34] said that among Adolescent females, both depression and hoplessness were significantly related to suicidal intent, whereas among adolescent males, only depression was related to suicide intent.

Nielsen et al.[33] found that patients using kinds of self-injury other than self-poisoning or wrist cutting scored high. In case of self-poisoning, suicidal intent did not influence the choice of toxic agent, nor was the choice of method and / or choice of toxic agent affected by alcohol ingestion. Alcohol-dependent patients who made highly lethal attempts scored relatively low on the suicidal intent scale.

Fierreria de Castro et al.[16] said that there is a positive correlation between high para suicide intention and comorbidity of Alcohol dependence and major depression. **Souminen et al**.[48] found a higher suicidal intent and lower impulsiveness in cases of major depression without alcohol dependence than with alcohol dependants without depression.

E. DEPRESSION AND SUICIDAL ATTEMPTS

The phenomenon of co-morbidity is now an object of serious study and is considered to be one of the most important advances in the field of psychiatric nosology. Co-morbidity in alcoholism is a predictor for assaultive behaviour, rehospitalisations, and increased consumption of psychiatric resources. Individuals with co-morbidity are more likely to experience severe impairment in social and occupational functioning. The co-morbid disorders typically follow a more severe course than single disorders and are less amenable to treatment.

The co-occurrence of alcoholism and depression in clinical samples of alcoholism vary considerably from 16%-68%. Alcoholics are nearly twice as likely to experience an episode of major depression as non-alcoholics and are also at an increased risk for suicide and tend to seek more treatment then non-depressed alcoholics. **Gupta Sumeet et al.**[19] In their study of psychiatric co-morbidities of consecutive 143 male patients with alcohol abuse found that 20.3% had mood disorders. **Patil Vanshree et al**.[36] found that Alcohol dependent patients more than 45 years of age are more likely to be associated with depression.

Khisty et al.[24] in their study on 150 patients said that 39.39% had depression disorders. The patients with co-morbidity were more likely to start drinking at younger age, have more suicidal attempt, more marital problems

and family history of mental illness. Significantly severity of dependence was not correlated with co-morbidity.

Chaudhary et al.[11] said that alcoholics have a greater risk for developing depression (33.3%) when compared to non-alcoholism (6.6%) and that socio demographic variables do not account for depression. **Beautrais**[3] said that strongest risk factors for youth suicide are mental disorders in particular affective disorders.

Bernal et al.[6] found that psychiatric diagnosis were strongly related to suicidality. Among them, major depressive episode is the commonest. **Waller et al**.[50] concluded that unipolar and Bipolar I disorders with a concurrent alcohol use disorder were always associated with an increased risk for suicidality.

Driessen et al.[15] said that co-morbidity patterns were associated with the greatest risk for suicidal ideas. They underlined the importance of depression for the suicidal risk in alcohol-dependent patients, while alcoholism itself appears to be only a moderate risk factor.

Malone et al.[26] said that the first 3 months after the onset of Major Depressive episode and the first 5 years after the life time onset of major depressive disorder represented the highest risk period for attempted suicide, independent of the severity or duration of depression. Familial, genetic, early-life loss experiences and co-morbid alcoholism may be casual factors.

Depression among alcohol dependents can be induced by the effect of alcohol itself.Alcohol produces disinhibition and removes the remaining constraints to suicide in a dependent individuals. Another mechanism for enhanced suicide risk in a substance abusing population may be related to serotonergic functioning. Recent studies demonstrate the link between hypoactive serotonin function and violent suicide attempt (**Brow et al., Palaniappan et al.,[35]).**

Roy et al., studied 298 alcoholics who had attempted suicide and compared these findings with data on completed suicide. Several similarities were found namely-the presence of psychiatric diagnosis especially major depression, antisocial personality disorder, mixed substance abuse, panic, phobic and generalised anxiety disorder. Like suicide completers, attempters had a family history of alcoholism and had experienced alcohol related problem at an earlier age. They have concluded by saying significantly more attempters had other life time psychiatric diagnosis, suggesting the possibility that suicidal behaviour in the course of alcoholism indicates profound psychopathology.

DE Castro,[16] found a significant association between parasuicides with high intention to die and comorbid alcohol dependence with depression. **BLACK et al.,[7]** in their study distinguished attempters on (a) substance abuse histories (b) depressive symptomology (c) Antisocial behaviour. The attempters had increased hamilton rating, history of depression, drinking at the

time of depression and were treated with antidepressants. The factors that correlated with suicidal attempt in their study were excessive uncontrolled drinking, early drinking depressive symptoms and antisocial personality. They have concluded that alcoholism, depression, antisocial personality all predispose an individual to suicide but the interaction is particularly dangerous.

AIM AND OBJECTIVES

AIM OF THE STUDY

To identify the risk factors associated with suicide attempts among individuals with alcohol dependence.

OBJECTIVES

- To describe the suicidal behaviour of Alcohol dependents
- To study the incidence and association between socio-demographic variables and suicide attempts in Alcohol dependents
- To study the association between stressful life events and suicide attempts in Alcohol dependents.
- To assess the co-occurrence of depression among Alcohol dependents who attempt suicide.

HYPOTHESIS

- There is positive relationship between Socio-demographic variables and suicide attempts in alcohol dependents.

- There is positive relationship between stressful life events and suicide attempts in Alcohol dependents.

- There is positive relationship between depression and suicide attempts in Alcohol dependents.

MATERIALS AND METHODS

SETTING

Cases and controls were recruited from Deaddiction unit of Department of psychiatry, Stanley medical College. Study was conducted from January to July in the year 2007.

Sample

A total of thirty cases and thirty controls were recruited for the study.

Design

Case control study has been used

INCLUSION CRITERIA

Cases

- Persons attending the out patients department of Deaddiction unit and patients admitted in the Deaddiction ward.
- Persons satisfying the criteria for Alcohol dependence according to ICD-10 classification of mental and behavioural disorders.

- Persons who had indulged in any deliberate self harm accompanied by an expression of intent to die after the onset of Alcohol use.

- Persons aged eighteen years and above.

Controls

- Persons attending the out patients department of the Deaddiction unit and patients admitted in Deaddiction ward.

- Persons satisfying the criteria for Alcohol dependence according to ICD-10 classification of mental and behavioural disorders.

- Persons who were matched with cases for age, marital status, but who had not indulged in any act of deliberate self harm.

EXCLUSION CRITERIA

Cases

- Severely psychotic patients

- Persons with cognitive impairments

- Persons below eighteen years of age

- Comorbid substance abuse

Control

- Severely psychotic patients
- Persons with cognitive impairments
- Comorbid substance abuse.
- Persons aged below eighteen years of age.

TOOLS USED

I. Self innovated proforma to elicit the socio demographic data and circumstances regarding suicide attempt.

II. Short term Alcohol dependence Data questionnaire

III. Beck's suicidal intent scale

IV. Presumptive stressful life events scale (Gurmeet Singh et al.,)

V. Hamilton Depression Rating scale

VI. Mini mental status examination.

VII. The ICD-10 classification of mental and behavioural disorders.

I. Self innovated proforma

- ❖ Information regarding name, age sex, marital status, education, occupation and family system were obtained.

- ❖ Information regarding circumstances of suicidal attempt was also gathered-date, time, place of attempt, treatment, alcohol consumption prior to attempt, method of attempt and accessibility.

- ❖ Information regarding prior attempts was also obtained.

II. Short-form Alcohol Dependence Data Questionnaire (SADD)

The drinking pattern was assessed using the above questionnaire. This contains 15 items. This elicits the details regarding preoccupation about drinking, day time drinking, severity of dependence, withdrawal symptoms, hallucinatory experiences, blackouts, drinking at work place. Each item can be scored as 0-never, 1-Sometimes, 2-often, 3-nearly always. A score of 20 or more indicates high dependence. This questionnaire measures the degree of dependence and the ability to control drinking.

III. Suicidal intent scale

Beck, schuyler and Herman (1974) developed a scale to measure the degree of suicidal intent.

The scale has two sections.

1. The first covers the circumstances surrounding the attempt.

2. The second describes the patients expectations and feelings at the time of attempt.

It includes fifteen items each one can be scored 0, 1 or 2. The total score ranges between 0-30. High scores correspond to higher suicidal intent.

IV. Presumptive stressful life events scale

The above scale was developed by Gurmeet Singh et al. in the year 1984. This scale has 51 items and each item has a mean stress score. A cumulative score can be obtained by summing up the individual scores and weighed depending upon the stress caused to the individual. This scale assess the events in lifetime or within a short span of time.

V. Hamilton Rating scale for depression

The Hamilton rating scale for depression developed by M.Hamilton is the most widely used rating scale to assess the symptoms of depression. The Ham-D is an observer-rated scale consisting of 17 to 21 items (including two part items, weight and diurnal variation). Ratings are based on clinical interview, plus any additional available information such as nursing or family member report. The items are rated on either a 0 to 4 spectrum or a 0 to 2 spectrum. The Ham-D also relies quite heavily on the clinical interviewing skills and the experience of rater in evaluating individuals with depressive

illness. As most patients score zero on rare items in depression (depersonalisation, obsessional and paranoid symptoms), the total score on the Ham-D generally consists of only the sum of first 17 items. The strength of Ham-D is its excellent validation/research base, and case of administration. Its use is limited in individuals who have psychiatric disorders other then primary depression.

VI. Mini-mental status examination

This scale developed by M Folstein in 1975, is a screening instrument that gives a brief assessment of an individual's orientation to time and place, recall ability, short memory, and arithematic ability. The total score ranges from 0-30. Patients with mild Dementia tend to score from 20-24, moderate from 11 to 19 and severe from 0-10.

VII. THE ICD-10 Classification of mental and behavioral disorders

F10.2 Dependence syndrome

A cluster of physiological, behavioural and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual then other behaviours that once had greater value. A central descriptive characteristics of the dependence syndrome is the desire (often strong, sometimes over powering) to take psychoactive drugs (which may or may not have been medically prescribed) alcohol or tobacco.

There may be evidence that return to substance use after a period of abstinence leads to a more rapid reappearance of other features of the syndrome than occurs with non dependent individuals.

DIAGNOSTIC GUIDELINES

A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at sometime during the previous year.

a. a strong desire or sense of compulsion to take the substance

b. difficulties in controlling substance-taking behaviour in terms of its onset, termination or levels of use.

c. a physiological withdrawal state when substance use had ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of reliving or avoiding withdrawal symptoms.

d. evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses (clear examples of this are found in alcohol and opiate-dependent individuals who may take daily doses sufficient to incapacitate or kill non tolerant users).

e. Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the subsance or to recover from its effects.

f. Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually or could be expected to be, aware of the nature and extent of the harm.

PROCEDURE

A total of thirty cases and thirty controls that fulfilled the inclusion and exclusion criteria were recruited for the study. They were informed about the study and informed consent was obtained.

The cases were matched with controls for age, and marital status. To assess the cognitive status MMSE was done.

ETHICAL COMMITTEE APPROVAL

The study was submitted for the approval of the ethical committee meeting held on 17.05.07 at Dean's chamber at Govt. Stanley Hospital and approval was obtained.

STATISTICAL METHODS EMPLOYED

Qualitative data were given in frequencies with their percentages. Data were analysed using Pearson Chi-square test. Quantitative data were given in mean and standard deviation. Data were analysed using student independent t-test.

Correlation between life events, suicidal intent and depression were analysed using Pearson's correlation coefficient method. P value less than 0.05 was taken as significant.

OBSERVATION AND RESULTS

SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

TABLE-1

AGE DISTRIBUTION

Age group (Yrs.)	No. of cases	Controls	Chi-square	P value
16-35	20 (66.7%)	20 (66.7%)	$x^2 = 0.00$	1.00 Not significant
36-55	8 (26.7%)	8 (26.7%)		
>55	2 (6.7%)	2 (6.7%)		
Total	**30**	**30**		

Age of persons in the study group was about 35 years. As age matched controls were taken for the study their percentage was same as for cases. There was no significant statistical difference between cases and control in age distribution.

TABLE-2

MARITAL STATUS

Marital Status	**Cases**	**Controls**	**Chi-square**	**P value**
Married	24 (80.0%)	24 (80.0%)	$x^2 = 0.00$	1.00 Not significant
Unmarried	5 (16.7%)	5 (16.7%)		
Divorced	1 (3.3%)	1 (3.3%)		
Total	**30**	**30**		

As marital status matched controls were taken for the study, their percentage was same as for cases. There was no significant statistical difference between cases and control.

TABLE-3

EDUCATIONAL STATUS

Educational status	**Cases**	**Controls**	**Chi-square**	**P value**
Illiterates	9 (30.0%)	4 (13.3%)	$x^2 = 11.67$	0.009 significant
Primary school	13 (43.3%)	5 (16.7%)		
High school	7 (23.3%)	16 (53.3%)		
College	1 (3.3%)	5 (16.7%)		
Total	**30**	**30**		

Among cases majority of them had primary school Education (43.3%), when compared with cases majority of the controls had high school educational qualification (53.3%). There is significant statistical difference between cases and controls.

TABLE-4

OCCUPATIONAL STATUS

Occupational status	**Cases**	**Controls**	**Chi-square**	**P value**
Employed	27 (90.0%)	25 (83.3%)	$x^2 = 0.58$	0.44 Not significant
Unemployed	3 (10.0%)	5 (16.7%)		
Total	**30**	**30**		

Among the cases, majority of them were employed (90.0%). But they had work related stressors which was evident from the assessment on psles. There is no significant statistical difference between cases and controls.

TABLE-5

INCOME

Income	**Cases**	**Controls**	**Chi-square**	**P value**
<1500	13 (43.3%)	11 (36.7%)	$x^2 = 0.29$	0.86 Not significant
1500-5000	15 (50.0%)	17 (56.7%)		
>5000	2 (6.7%)	2 (6.7%)		
Total	**30**	**30**		

Majority of cases and controls belonged to 1500-5000 income group. There was no significant statistical difference between cases and controls.

TABLE-6

DOMICILE

Domicile	**Cases**	**Controls**	**Chi-square**	**P value**
Urban	27 (90.0%)	29 (96.7%)	$x^2 = 1.07$	0.31 Not significant
Rural	3 (10.0%)	1 (3.3%)		
Total	**30**	**30**		

Among cases and controls majority of them are from urban background. There was no significant statistical difference between cases and controls.

TABLE-7

FAMILY SYSTEM

Family system	**Cases**	**Controls**	**Chi-square**	**P value**
Joint	18 (60.0%)	9 (30.0%)	$x^2 = 5.45$	0.02 significant
Nuclear	12 (40.0%)	21 (70.0%)		
Total	**30**	**30**		

Majority of cases (60.0%) belong to joint family system. Among controls majority of them (70.0%) belong to nuclear family system. There is significant statistical difference between cases and controls.

DATA REGARDING THE CIRCUMSTANCES OF SUICIDAL ATTEMPT

TABLE-8

TIME OF ATTEMPT

Time of attempt	Cases n=30	Percentage
Morning	11	36.7%
Afternoon	5	16.7%
Evening	6	20.0%
Night	8	26.7%

Majority of the cases had made their attempt in the morning (36.7%). About 26.7% had attempted in the night, 20.0% had attempted in the Evening and 16.7% had attempted in the afternoon.

TABLE-9

PLACE OF ATTEMPT

Place of attempt	Cases n=30	Percentage
Home	21	70.0%
Public place	8	26.7%
Others home	1	3.3%

Most of the cases had made their attempt at home (70.0%). About 26.7% of cases had made their attempt at public place, 3.3% had attempted at other's home.

TABLE-10

COMPARISON OF TREATMENT

Treatment	Cases n=30	Percentage
Treated	18	60.0%
Not treated	12	40.0%

Majority of the cases were hospitalised and treated (60.0%). About 40.0% of cases were untreated.

TABLE-11

INTOXICATION AT THE TIME OF ATTEMPT

Intoxicated during attempt	**Cases n=30**	**Percentage**
Intoxicated	27	90.0%
Not intoxicated	3	10.0%

Most of the cases were intoxicated at the time of attempt (90.0%). About 10.0% were not intoxicated at the time of attempt.

TABLE-12

METHOD OF ATTEMPT

Method of attempt	Cases n=30	Percentage
Poisoning	17	56.7%
Hanging	6	20.0%
By Fire	6	20.0%
Jumping in front of running train	1	3.3%

About 56.7% of cases attempted suicide by poisoning, 20.0% by hanging and by fire, 3.3% by jumping in front of running train.

TABLE-13

ACCESSIBILITY

Accessibility of the method	Cases n=30	Percentage
Home	19	63.3%
Procured	11	36.7%

About 63.3% of cases made their attempt at home, 36.7% made an effort to procure the material.

TABLE-14

PREVIOUS SUICIDAL ATTEMPTS

Number of attempts	**Cases n=30**	**Percentage**
Nil	14	46.7%
One	7	23.3%
Two	6	20.0%
Thrice or above	3	10.0%

Majority of the cases (46.7%) had no previous attempts, 23.3% of cases had attempted once, 20.0% had attempted twice and about 10.0% had three or more attempts.

TABLE-15

COMPARISON FOR TOTAL SCORE IN SADD

	Group	**N**	**Mean**	**Std. Deviation**	**Student t test**
SADD	Cases	30	41.10	1.583	t = 13.73
	Controls	30	32.30	3.131	p = 0.001 significant

From the above table it is understood that there is significant difference between cases and controls regarding the level of dependence. Majority of the cases had higher degree of dependence.

TABLE-16

COMPARISON FOR TOTAL SCORE IN STRESSFUL LIFE EVENTS SCALE

	Group	**N**	**Mean**	**Std. Deviation**	**Student t test**
Life events	Cases	30	192.73	65.883	t= 6.27
	Controls	30	69.23	39.069	p = 0.001 significant

There was significant statistical difference in total mean score of stressful life events scale among the cases and controls. Most commonly reported stressful events are family conflict, financial loss, marital conflict and unfulfilled commitments.

TABLE-17

COMPARISON OF LIFE EVENT SCORE AND SUICIDAL INTENT AMONG CASES

	Suicidal intent	N	Mean	Std. Deviation	Student t test
Life events	<24.17	13	157.85	57.464	t = 2.82
	>24.17	7	219.41	60.379	p = 0.008 significant

The cases were divided based on the mean of the intent score (Mean-24.17). Persons scoring above the mean (n=7) have high suicide intention. Persons scoring below the mean (n=13) have low suicide intent. These two groups were compared for their life events scores.

The mean total score for life events scale in cases with high intent is 219.41 with SD 60.379. For cases with low intent mean is 157.85 with SD 57.464. This difference was statistically significant. Hence there is a relationship between high intent and higher life event score.

TABLE-18

COMPARISON FOR DEPRESSION

	GROUP			
	Cases		**Control**	
	n	**%**	**n**	**%**
Depression	26	86.7%	2	6.7%
No depression	4	13.3%	28	93.3%

x2 = 38.57

p = 0.001 significant

About 86.7% of cases have met the diagnostic criteria for depression. Among controls about 6.7% of have met the depression criteria. When cases and controls were compared for depression, there was significant difference. Thus it is inferred that there is association between suicide attempt and depression in Alcohol dependents.

TABLE-19

CORRELATION BETWEEN LIFE EVENTS, DEPRESSION AND SUICIDE INTENT

		Life events	**Suicide intent**	**Depression**
Life events	Pearson correlation	1	0.381(*)	0.295(*)
	Sig (2-tailed)	-	.038	.02
	N	30	30	30
Suicide intent	Pearson correlation	0.381 (*)	1	0.092
	Sig (2-tailed)	.038	-	0.627
	N	30	30	30
Depression	Pearson correlation	0.295 (*)	0.092	1
	Sig (2-tailed)	.02	0.627	-
	N	30	30	30

Correlation is significant at the 0.05 level (2-tailed)

Among the cases the correlation between life events, depression and suicide intent was found out using Pearsons correlation coefficient formulae. There was significant correlation between life events, suicide intent and depression.

DISCUSSION

The study was carried out by using a case control design. Both the cases and controls were matched for socio- demographic variables such as age and marital status with the aim of controlling confounding factors before recruitment and analysis.

To assess the cognitive status MMSE was done. The patients with cognitive impairment were excluded from the study.

The cases and controls were compared over various socio demographic variables. The variables compared are age, marital status, educational status, occupation, Income, domicile and family system.

The mean age of the study group was about 35 years. This is in accordance with the study of DESHPANDE et al.,[14] who reported that the study group had an age range of 21-59 yrs. He also pointed out that the mean age of problem drinking was 26-32 yrs. and the mean alcohol use was 11-18 years. As age matched controls were taken for the study, their percentage was same as that of cases. There was no significant statistical difference between the two groups.

Majority of the cases were married. About 16.7% were unmarried. This is similar to the study of ROY et al, where most of the cases were married (42.30%).

But in most of the studies, majority of the cases were either single or divorced (PREUSS et al;[40] MODESTO-LOWE et al.[29]). Since marital status matched controls were taken for the study, their percentage was same, when compared with cases. There was no significant difference between the study groups.

Regarding educational status, majority of the suicide attempters had only primary school education. When compared with controls there was significant statistical difference between the study groups. BEAUTRAIS[3] in his study had said that one of the risk factors for suicidal behaviour is educational disadvantage. SCHMIDTKE et al.[43] had said that one of the potential risk factor for attempted suicide in alcohol dependents is poor education.

Most of the suicide attempters were employed when compared to control group. This is in contrast to the study of SCHMIDTKE et al.,[43] where he concluded that unemployment is the risk factor in suicide attempters. There was no significant statistical difference between the groups.

Majority of the cases and controls belonged to 1500-5000 income group. There was no significant statistical difference between cases and controls. PATILVANSHREE et al.[36] said that attempted suicide in Alcohol dependents is common in those individuals whose income is less than Rs.500/- month.

When compared with non-attempters, higher number of attempters had come from joint family system. ADITYANJEE et al;[2] had found that more

suicide attempters in India came from joint family system. There was significant statistical difference between cases and controls.

Most of the cases had made their suicide attempt in the morning. This is in contrast to the study of VALTONEN et al.[49] where the study subjects had attempted suicide in the late evening and around mid night.

About 60% of cases were hospitalised and treated. Treated cases were characterized by serious suicidal intent and medical threat to life. HASIN et al; in their study had stated that the potential medical lethality of treated attempts were significantly higher when compared to untreated attempts.

Most of the cases were intoxicated at the time of attempt. This is in accordance with various studies. HUFFORD[20] stated that acute effects of alcohol intoxication act as proximal risk factors for suicidal behaviour. SHER[45] had stated that attempters are more prone for suicide especially at the end of a binge or in the very early phase of withdrawal.

In our study about 56.7% of cases had attempted suicide by poisoning (due to organophosphorous compounds). This is similar to various studies. PONNUDURAI et al.[39] found that most common mode of suicide in Chennai, was the use of organophosphorous compound poisoning. NIELSEN et al.[33] had said that suicidal intent did not influence the choice of toxic agents, nor was the choice of method and / or choice of toxic agent affected by alcohol ingestion.

DESHPANDE et al.[14] found that self-poisoning was the commonest method of suicide in India.

About 53.3% of cases had previous suicidal attempts. KHISTY et al.[24] said that many cases had history of previous suicidal attempts. MODESTO-LOWE et al.[29] in their study said that suicide attempters are likely to be young and have made prior attempts.

Cases and controls were compared for the severity of dependence by using SADD questionnaire. Most of the cases had higher degree of dependence. There was significant statistical difference between cases and controls. CORNELIUS et al.[13] had said that quantity of drinking per drinking day was significantly higher in those making a recent suicidal attempt.

There was significant statistical difference in the total mean score of stressful life events scale among cases and controls. Most commonly reported events were family conflict, financial loss and unfulfilled commitments. PAYKEL et al.[37] said that most common stressful life event in attempters is interpersonal problems. BROWN et al.[9] said that severe and chronic life stressors may lead to alcohol relapse.

CONNER et al.[12] said that financial difficulties were frequent among medically serious attempters. In our study the attempters with high suicidal intent had more life event scores when compared with persons with low intent. This difference was statistically significant.

Majority of the cases had depressive disorder. When compared with controls, there was significant statistical difference. GUPTA SUMEET et al.[19] in their study found that about 20.3% had mood disorders (depressive disorder). CHAUDHARY et al.[11] said that alcoholics have a greater risk for developing depression about 33.3%, when compared to non-alcoholics (6.6%). WALLER et al.[50] said that unipolar and Bipolar I disorder are associated with concurrent alcohol use disorder.

In our study, when life events was compared with suicide intent and depression there was significant correlation between them. When suicidal intent was compared with life events and depression, there was significant correlation between suicide intent and life events, but not with depression. When depression was compared with life events and suicide intent, there was significant correlation between depression and life events, but not with suicide intent. Hence it is inferred that suicide attempters with severe stressors are more prone for depression and high suicide intent.

SUMMARY AND CONCLUSIONS

The present study is an attempt to find out the risk factors associated with suicide attempts among male alcohol dependents. The sample in this study consists of thirty cases and thirty controls recruited from Deaddiction unit of department of psychiatry, Stanley Medical College.

The study group were interviewed with informed consent and the following instruments were used: self innovated proforma to elicit the Sociodemographic data questionnaire, Beck's suicidal intent scale, presumptive stressful life events scale, Hamilton Depression Rating scale and Minimental status Examination.

There was no significant difference between cases and controls with regard to sociodemographic variables except for educational status and family system.

Descriptive analysis of the cases show that 36.7% had attempted suicide in the morning hours, 70% had attempted suicide in their home, 60% were hospitalised and treated, 90% were intoxicated at the time of attempt, 56.7% self poisoned, 20% attempted hanging, 20% attempted suicide by fire and 3.3% by Jumping in front of running train, and about 53.3% had previous suicidal attempts.

The cases and controls were compared for the following variables; severity of dependence, Life events and depression.

There was statistically significant difference between cases and controls regarding the severity of dependence as indicated by SADD. Thus it is concluded that severity of dependence is one of the risk factors for attempted suicide.

When the life events are studied as a possible factor for attempted suicide, it is concluded from this study that cumulative stressful life events is significantly associated with suicidal attempters, as the study groups differed significantly for total presumptive life event scores. In our study we had also found that suicide attempters with severe stressors are more prone for depression and high suicide intent. Several studies indicate that people drink as a means of coping with economic stress, job stress, and marital problems, often in the absence of social support, and that the more severe and chronic the stressor, the greater the alcohol consumption and the risk for attempted suicide.

One of the key findings in this study is that depression is significantly related to suicidal attempt. Hence efforts must be taken to probe and establish the possible comorbidity of depression among alcohol dependents.

Treatment and management of patients with alcohol dependence and concomitant suicidal attempts is crucial, as is the recognition of these patients in emergency and other health care service contacts. The treatment strategies

must be based on current knowledge of risk factors for suicidal behaviour, efficacy of treatment for alcohol dependence or relevant co-morbid conditions and problems known to be common in treatment settings.

Hence the following principles are suggested in the management of alcohol dependent individuals:- (i) suicidal threats or communication by alcohol-dependent individuals in emergency and other contacts should be viewed seriously. (ii) Possibility of comorbid depression should be well evaluated, a consequent treatment plan initiated and follow-up arranged. (iii) Appropriate pharmacological treatment should focus on reducing the amount of drinking. (iv) Known epidemiological and clinical risk factors, adverse life events in particular, should be recognised and taken into account.

LIMITATIONS AND SUGGESTIONS

The study samples were recruited from the de-addiction unit and treatment seeking Alcohol dependents. Hence the study could not be generalized to the community population. Even though the sample size was small, it was adequate for statistical analysis.

Axis II disorders in particular antisocial personality disorder (ASPD) was not studied. It is a limitation considering the fact that ASPD is more often associated with suicidal attempters in many previous studies.

In the study only male alcohol dependents were included because in our department number of female alcohol dependents reported were very less.

The study can be extended further by evaluating the impact of an intervention on suicidal behaviour.

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ETHICAL COMMITTEE APPROVAL

/

MINUTES OF THE ETHICAL COMMITTEE MEETING HELD ON 17-5-2007 AT DEAN'S CHAMBER AT GOVERNMENT STANLEY HOSPITAL, CHENNAI-1

The Dean, Vice Principal, presided over the meeting

The Committee members were present to discuss the projects submitted by the applicants to do the project in the Stanley Medical College and Hospital.

The applicants and their guides (Senior Professors of this college) also present in the meeting.

The following projects were submitted for the approval of the Ethical Committee.

1.Dr.R.Surendran, HOD of Surgical Gastroenterology – "Multiple center, Open-label, Randomized Comparative Study of Tigecycline Vs Ceftriaxone Sodium plus Metronidazole for the Treatment of Hospitalized patients with complicated Intra-addominal infection – Sponsored by Wyeth Pharmaceuticals, Inc."

2.Dr.G.Rajkumar, MD Paediatrics Second year. – "Correlation between Clinical manifestations and sero positivity for HIV among children admitte in Stanley Medical College & Hospital."

3.Dr.G.Murugan, PG in Biochemistry – "Evaluation of trace element status in Hemodialysis patients"

4. Dr. Syed Ummar. I – "Psychiatric Sequelae in Drug – Naïve Hypothyroid patients"

5.D.G.Sasikala – MD Microbiology-PG – Isolation, Speciation of candida in vaginal candidiasis and antifungal susceptibility in relation to azole resistance.

6. Dr.Anand Bhimaray Janagond PG in Microbiology – "Study of opportunistic infections in HIV positive patients"

7.Dr.Mrs. David Agatha, First Year MD Microbiology PG – Study of aerobes and anaerobes in Otitis media, Diabetic foot lesions and Orodental Infections."

8.Dr.Mohamed Rafi – "Intervention study in Malnutrition among infants in Rural Commuity of Thiruvallur District t PHC Block level."

9.Dr.M.Sridhar, MD Psychiatry (Final Year) - "Quality of Sleep and Day time Sleepiness in Depression"

10.Dr. M.Priya Subhashini, PG in MD Psychiatry (Final year) – Evaluating the Risk Factors Associated with attempted suicide among individuals with alcohol dependence."

11.Dr.N.Gowdhaman, PG in MD(Physiology) – Pulmonary function studies in women with Rheumatoid arthritis.

12.Dr.B.Adikesavan, PG in M.D.(Physiology) – Nerve conduction studies in Hypothyroid and Hyperthyroid patients.

13.Dr.P.Rajeshprabhu – DM Postgraduate – "Naturl history of cirrhosis with portal hypertension –Predictors of morbidity and mortality"

14.Dr.P.Rajeshprabhu – DM Postgraduate – "Doppler study as an indirect assessment of hepatic venous pressure gradient in assessing the severity of portal hypertension"

15.Dr. Anand/Dr.Gokul – DM Postgraduate – "Are Antisecretory Drugs A.Nutrient Supplement for the poor."

16.Dr.Aravindh. S. DM Postgraduate – "Autonomic Function Testing in Decompensated Liver Disease with Disproportionate Pedal Edema and in Non-Cirrhotic Portal Hypertension"

17.D.Aravindh. S. – DM Postgraduate – "Heart Rate Variability in Cirrhotics and Non Cirrhotics"

18.Navaneeth Chandru Kumar etc. – DM Postgraduate- "Hepatitis B vaccinationstatus among medical students of Stanley Medical College"

19.Dr.Elisha Benjamin J.B.Rajesh Prabhu –DM Postgraduate – "Studies on the expression pattern and mechanism of nuclear localization of Gas7 protein inhuman preneoplastic and neoplastic Gastric tissues."

20.Dr.Aparna Vijayasekaran etc. – DM Postgraduates – "GER Prevalance amongst Stanley Medical School and Hospital Personnel"

21.D.S.Chandra Mohan , DM Postgraduate – "Serprevalence of anti-filarial antibodies in cirrhotic patients – South Indian population"

22.Dr. S.Chandra Mohgan, DM Postgraduate – "Role of UGI Endoscopy and Laboratory Investigations in Functional Dyspepsia"

23.Dr.Selvasekaran , DM Postgraduate – "Pulmonary functions in liver cirrhosis"

24.Dr.Selvasekaran, DM Postgraduate – "Patency of Left Portal Vein in Extra Hepatic portal Vein Obstruction."

25.Dr.Parthasarathy.S., & Dr.Ssselvasekaran, DM Postgraduates – "Altered activation of MUCI/EGFR down stream signaling insquamous cell carcinoma and H.Pylori mediated Barrett's Adenocarcinoma sequence in Oesophagus."

The applicants are narrated their project aim and the way of the study conducted in the Stanley Medical College and Hospital, Chennai-1.

The Project submitted by the Prof. & HOD of Surgical Gastroenterology is also approved by the Committee. But the project involved with the sponsored company. Hence he is requested to get necessary permission from the Director of Medical Education, Chennai-10 for doing the project in the Government Stanley Hospital, Chennai-1.

The topic presented by Dr.B.Gayathri – "Value of High sensitivity C.Reactive protein in Diabetes mellitus " was approved after corrections.

Dr.S.Ramamanohaori, submitted the topic –"Health Education intervention study on OBESE Children in Britania Hr. Sec. School, Padi, Chennai-50" - for approval of the committee. But she is not represented in the Ethical Committee meeting on 17-5-2007.

After going through eight copies of protocol, patient information sheet, investigator brochure and informed consent, the ethics committee has approved of all the above, the study under the referenced protocol.

SIGNATURE OF THE ETHICAL COMMITTEE MEMBERS:

Dr.T.Raveendran, Dean

Dean
Stanley Medical College
Chennai-600 001
Tamil Nadu – India

Dr.A.Sundaram, Vice Principal,

VICE PRINCIPAL
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V Jayant
DR V. JAYANTHI, M.D.,D.M.,(GE)
Gastroenterologist
Reg. No. 45456
GOVT. SM. H... CHENNAI

Nursing Superintendent

Advocate

ar.

CONSENT FORM

I was informed and explained of the purpose and nature of the study. I am willing to participate in this study. I hereby give my full consent for the study.

Signature of the Patient/Control

Name of the Patient/Control

APPENDIX-1

SOCIO DEMOGRAPHIC PROFILE

1. Name
2. Age (year)
3. Sex (Male/Female)
4. Marital status (Married/Unmarried/Divorced)
5. Occupation (Employed/Unemployed)
6. Per capita income <1500, 1500-5000, > 5000
7. Domicile (Urban/Rural)
8. Family system (Joint/Nuclear)
9. Informant (Relationship)

CIRCUMSTANCES OF SUICIDAL ATTEMPT

1. Date of suicidal attempt
2. Time of attempt (Morning/Afternoon/Evening/Night)
3. Place of attempt (Home/Public place/others home)
4. Was the person hospitalized (Treated/Not treated)
5. Was Alcohol taken prior to attempt (Taken/not taken)
6. Was any other drug of abuse taken prior to attempt (Taken / Not taken)
7. Method of suicidal attempt (Poisoning/Hanging/By fire/Jumping infront of train)
8. Accessibility of the Method (Home/Procured)
9. How many previous suicidal attempts (None/One/Two/Three or above)
10. Was alcohol taken prior to attempt (Yes/No/Not known)
11. Was any other drug of Abuse taken prior to attempt (Yes/No/Not known)
12. Method of suicide (Poisoning/Hanging/By fire/Jumping in front of train)

APPENDIX-2

SHORT FORM ALCOHOL DEPENDENCE DATA

QUESTIONNAIRE (SADD)

1. Do you find difficulty in getting the thought of drinking out of your mind.
2. Is getting drunk more important than your next meal.
3. Do you plan your day around when and where you drink.
4. Do you drink in Morning, Afternoon and Evening.
5. Do you drink for the effect of alcohol without caring what drinking is it.
6. Do you drink as much as you want irrespective of what you are doing the next day.
7. Given that many problems might be caused by alcohol do you still drink.
8. Do you feel that you won't be able to stop drinking once you start.
9. Do you try to control drinking by stopping for days or week.
10. The morning after a heavy drinking session do you need your first drink to get yourself.
11. Do you get shakes or jitters in the next day morning.
12. After a heavy drinking session do you wake up and retch or vomit.
13. Do you go out of your way on the next day to avoid people.
14. After a heavy drinking session do you see frightening things that later you realise were imaginary.
15. Do you get black outs.

SCORING

O-Never, 1-Sometimes, 2-Often, 3-Nearly always

Maximum score 45.

APPENDIX-3

BECK'S SUICIDAL INTENTION SCALE

I. Objective circumstances related to suicide attempt

1. Isolation

0 = Somebody present

1 = Somebody nearby or in visual or vocal contact

2 = No one nearby or in visual or vocal contact

2. Timing

0 = Intervention probable

1 = Intervention unlikely

2 = Intervention highly unlikely

3. Precautions against discovery/intervention

0 = No precautions

1 = Passive precautions eg. Avoiding others but doing nothing to prevent intervention, alone in room with unlocked door.

2 = Active precautions (eg. Door locked)

4. Acting to get help/during/after attempt

0 = Notified potential helper regarding attempt

1 = Contacted but did not specifically notify potential helper regarding attempt.

2 = Did not contact or notify potential helper

5. **Final acts in anticipation of death (eg. Will, gifts, insurance)**

0 = None

1 = Thought about or made some arrangement

2 = Made definite plans or completed arrangements

6. Active preparation for attempt

0 = None

1 = Minimal or moderate

2 = Extensive

7. Suicide Note

0 = Absence of note

1 = Note written but torn up or thought about

2 = Presence of note

8. Over communication of intent before the attempt

0 = None

1 = Equivocal communication

2 = Unequivocal communication

II. Self-Report

9. Alleged purpose of attempt

0 = To manipulate environment get attention revenge

1 = Components of '0' and '2'

2 = To escape, solve problems

10. Expectations of fatality

0 = Thought death was unlikely

1 = Thought death was possible but not probable

2 = Thought death was probable or certain

11. Conception of method's lethality

0 = Did less to self than thought would be lethal

1 = Was unsure if action would be lethal

2 = Equal or exceeded what he thought would be lethal

12. Seriousness of attempt

0 = Did not seriously attempt to end life

1 = Uncertain about seriousness to end life

2 = Seriously attempted to end life

13. Attitude toward living/dying

0 = Did want to die

1 = Components of '0' and '2'

2 = Wanted to die

14. Conception of medical rescubility

0 = Thought that death would be unlikely with medical attention

1 = Was uncertain whether death could be averted by medical attention

2 = Was certain of death even with medical attention

15. Degree of pre meditation

0 = None, impuslive

1 = Contemplated for 3 hours or less before attempt

2 = Contemplated for more than 3 hours before attempt

APPENDIX-4

PRESUMPTIVE STRESSFUL LIFE EVENTS SCALE (PSLES)
(Gurmeet Singh 1984)

Rank No.	Life Events	Mean Stress Score
1.	Going on pleasure trip or pilgrimage	20
2.	Wife begins or stops work	25
3.	Change in eating habits	27
4.	Change in social activities	28
5.	Reduction in number of family functions	29
6.	Gain of new family member	30
7.	Birth of daughter	30
8.	Change in sleeping habits	33
9.	Change in working conditions or transfer	33
10.	Retirement	35
11.	Begin or end schooling	36
12.	Outstanding personal achievement	37
13.	Change or expansion of business	37
14.	Change of residence	39
15.	Unfulfilled commitments	40
16.	Trouble with neighbour	40
17.	Getting married or engaged	43
18.	Appearing for an examination or interview	43
19.	Failure in examination	43
20.	Death of pet	44
21.	Major purchase or construction of house	46
22.	Break-up with friend	47
23.	Family conflict	47
24.	Minor violation of law	48
25.	Marriage of daughter or dependent sister	49
26.	Large loan	49

APPENDIX 5

HAMILTON DEPRESSION RATING SCALE

1. Depression (0-4) (gloomy attitude, pessimism about future, feelings of hopelessness, tendency to weep)
   0. not depressed 1. doubtful (trivial)
   2. mild (occasional weeping)
   3. moderate (frequent weeping) 4. severely depressed

2. Guilt (0-4) (pathological guilt)
   0. absent 1. feelings of self reproach
   2. ideas of guilt 3. illness might be punishment
   4. delusion of guilt

3. Suicide (0-4)
   0. absent 1. life not worth living
   2. wishing he were dead 3. suicidal ideas, half hearted attempts
   4. serious suicidal attempts

4. Initial insomnia (0-2) (difficulty in getting to sleep)
   0. not present 1. nil, trivial, infrequent
   2. obvious and severe symptoms

5. Middle insomnia (0-2) (disturbed sleep during the night)
   0. not present 1. nil, trivial, infrequent

6. Delayed insomnia (0-2) (early morning awakening)
   0. not present 1. nil, trivial, infrequent
   2. obvious and severe symptoms

7. Work and interest (0-4) (loss of interest in and decreased performance at work or in home duties) do not rate fatigue or energy here.
   0. no disturbance 1. doubtful, trivial 2. mild 3. moderate
   4. Severe-unable to carry on

8. Retardation (0-4)
   0. absent 1. Slight flattening of affect, fixity of expression
   2. Monotonous voice, delay in answering questions, tendency to sit motionless,
   3. Retardation prolongs interview to an extreme degree
   4. To a degree which makes interview impossible

9. Agitation (0-4) (this may co-exist with retardation)
   0. not present 1. Fidgetiness at interview

2. Obviously restless, picking at hands and cloths
3. Had to get up during interviews
4. Cannot stay still, tearing clothes

10. Anxiety (psychic) (0-4) (tension, difficulty in relaxing, irritability, worrying over trivial matter, apprehension, feelings of panic, fears, difficulty in concentration etc
    0. Absent 1. Doubtful, trivial 2. Mild
    3. Moderate 4. Severe

11. Anxiety (somatic) (0-4) (effects of autonomic over activity, attacks of giddiness, blurring of vision and tinnitus).
    0. Absent 1. Doubtful, trivial 2. Mild
    3. Moderate 3. Severe

12. Gastrointestinal symptoms (0-2) (loss of appetite, constipation, heavy feelings in abdomen, differentiate from symptoms which could be rated under anxiety above)
    0. Absent 1. Nil, trivial, infrequent
    2. Obvious and severe symptoms

13. General somatic symptoms (0-2) (fatiguability, loss of energy, diffuse and ill-defined muscle aches, heaviness of limbs)
    0. Absent 1. Nil, trivial, infrequent
    2. Obvious and severe symptoms

14. Loss of libido (0-2) (assess deterioration obviously related to present illness)
    0. Absent 1. Nil, trivial, infrequent
    2. Obvious and severe symptoms

15. Hypochondriasis (0-4)
    0. Absent
    1. trivial, doubtful, some preoccupation with bodily functions
    2. Much preoccupation with physical symptoms and with thoughts of organic disease
    3. Strong convictions of presence of organic disease to account for symptoms
    4. Delusions, hallucinations of rotting, blockage, etc.

16. Loss of insight (0-2)
    0. Has full insight 1. Doubtful, mild, some denial
    2. Lacks insight

17. Loss of weight (0-2)
    0. no change, or increase in weight
    1. Doubtful, slight loss
    2. obvious, severe loss weight

18. Diurnal variation (0-12)
    0. not present a. Symptoms worse in morning
    b. Symptoms worse in evening
    1. Doubtful, present to a mild degree
    2. Clear presence

19. Derealisation and depersonalization (0-4) (differentiate from lack of concentration or interest)
    0. Not present patient does not understand feelings from the question asked.
    1. Recognises feelings when asked but only experiences these mildly or doubtful.
    2. Recognises feelings when asked and experiences them frequently.
    3. Asserts that these feelings are present as part of his illness.
    4. Claims that these feelings are an important symptom of his illness.

20. Paranoid symptoms (0-4) (check affirmative answers carefully. Differentiate from guilt feelings. Include attitude of suspicion and malevolence imputed to others)
    0. Not present not elicited
    1. Doubtful, trivial suspicious
    2. Thinks others may wish him harm
    3. Delusions that others may wish him harm
    4. Paranoid hallucinations

21. Obsessional symptoms (0-2) (differentiate from preoccupations with depressive thoughts, ideas of guilt, hypochondriasis, paranoid thinking. Patient recognizes thoughts as being alien to normal thoughts and feelings, as producing distress and always struggles against them).
    0. No evidence
    1. Doubtful or to a mild degree
    2. Definitely present to a severe degree

APPENDIX-6
MINI MENTAL STATUS EXAMINATION QUESTIONNAIRE

Orientation (Score 1 if correct)

1. Name this hospital or building
2. What city are you in now?
3. What year is it?
4. What month is it?
5. What is the date today?
6. What state are you in?
7. What country is this?
8. What floor of the building are you on?
9. What day of the week is it?
10. What season of the year is it?

REGISTRATION (Score 1 for each object correctly repeated)

Name three objects and have the patient repeat them. Score number repeated by the patient. Name the three objects several more times if needed for the patient to repeat correctly.

ATTENTION AND CALCULATION

Subtract 7 from 100 in serial fashion to 65

maximum score = 5

RECALL (Score 1 for each object recalled)

Do you recall the three objects named before?

LANGUAGE TESTS

Confrontation naming	:	Watch, pen = 2
Repetition	:	"No. ifs, ands, or buts" = 1
Comprehension	:	Pick up the paper in your right hand, fold it in half, and set it on the floor = 3

Read and perform the command "Close your Eyes" = 1

Write any sentence (Subject, verb, object) =1

CONSTRUCTION

Copy the design below = 1

Maximum score = 30

KEY TO MASTER CHART

1. S.No. - Serial No.

2. GR - Group. 1. Cases 2. Controls

3. AGE - 1. 16-35 Yrs. 2. 36-55 Yrs. 3. 56 and Above

4. MS - Marital Status: 1. Married. 2. Unmarried
3. Divorced

5. ES - Educational Status : 1. Illiterate, 2. Primary School
3. High School, 4. College

6. OC - Occupation : 1. Employed 2. Unemployed

7. IN - Income: 1. <1500, 2. 1500-5000, 3. >5000

8. DO - Domicile: 1. Urban, 2. Rural

9. FS - Family System: 1. Joint 2. Nuclear

10. TA - Time of Attempt: 1. Morning, 2. Afternoon
3. Evening, 4. Night

11. PA - Place of Attempt: 1. Home, 2. Public Place
3. Other home

12. T - Treatment: 1. Treated, 2. Not treated

13. AI - Alcohol Intoxication: 1. Intoxicated,
2. Not Intoxicated

14. MOA - Method of attempt: 1. Poisoning, 2. Hanging,
3. By fire, 4. Jumping in front of running train

15. AC - Accessibility: 1 Home, 2. Procured

16. PS - Previous suicidal attempts : 1. Nil, 2. 1
3. 2, 4. 3 and Above

17. SADD - Short form Alcohol Dependence Data Questionnaire

18. PSLES - Presumptive stressful life events scale

19. HAM-D - Hamilton depression scale

20. SIS - Suicidal intent scale

Fig : Correlation between life events , Suicidal intent and depression